

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2005/002739

## A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl<sup>7</sup> H01L41/09, B41J2/045, 2/055, G01C19/56, G01P9/04, H01L41/08,  
41/18, 41/22

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl<sup>7</sup> H01L41/09, B41J2/045, 2/055, G01C19/56, G01P9/04, H01L41/08,  
41/18, 41/22

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho	1922-1996	Jitsuyo Shinan Toroku Koho	1996-2005
Kokai Jitsuyo Shinan Koho	1971-2005	Toroku Jitsuyo Shinan Koho	1994-2005

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 2001-223403 A (Matsushita Electric Industrial Co., Ltd.), 17 August, 2001 (17.08.01), Par. Nos. [0022] to [0033]; Figs. 1 to 3 (Family: none)	1-19, 24-48
A	JP 11-214763 A (Seiko Epson Corp.), 06 August, 1999 (06.08.99), Par. Nos. [0021] to [0070]; Figs. 1 to 6 & EP 932209 A2 Par. No. [0021] to [0071]; Figs. 1 to 6 & US 6194818 B1 column 3, line 29 to column 10, line 34; Figs. 1 to 6	1-19, 24-48

Further documents are listed in the continuation of Box C.

See patent family annex.

## \* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

31 May, 2005 (31.05.05)

Date of mailing of the international search report

14 June, 2005 (14.06.05)

Name and mailing address of the ISA/  
Japanese Patent Office

Authorized officer

Faximile No.

Telephone No.

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## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 2000-307163 A (Seiko Epson Corp.), 02 November, 2000 (02.11.00), Par. Nos. [0024] to [0033]; Fig. 3 (Family: none)	1-19, 24-48

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**Box No. II      Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3.  Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box No. III      Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

Whereas for a group of inventions in claims to fulfill the requirement of unity of invention, there must exist special technical features for linking the group of inventions so as to form a single general inventive concept,  
(continued to extra sheet)

1.  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  
4.  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1-19, 24-48

**Remark on Protest**

- The additional search fees were accompanied by the applicant's protest.  
 No protest accompanied the payment of additional search fees.

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Continuation of Box No.III of continuation of first sheet (2)

a group of inventions in claims 1-52 are linked only in terms of a matter that "a piezoelectric element comprising a first electrode film, a piezoelectric laminate consisting of a first piezoelectric thin film provided on the first electrode film and a second piezoelectric thin film provided on the first piezoelectric thin film, and a second electrode film provided on the piezoelectric laminate film, wherein the piezoelectric laminate film consists of a Perovskite-type oxide preferentially oriented to (111) plane".

However, this matter is disclosed in the prior-art document JP 2001-223403 A (Matsushita Electric Industrial Co., Ltd.), 17 August, 2001 (17.08.01), Par. Nos. [0022] to [0033], Figs. 1 to 3 and therefore does not constitute a special technical feature.

Consequently, there exists among the group of inventions in claims 1-52 no special technical feature for linking them so as to form a single general inventive concept.

Therefore, the group of inventions in claims 1-52 clearly do not fulfill the requirement of unity of invention.

In addition, according to the specific embodiments of the inventions in independent claims, claims in this international application describe nine inventions classified as claims 1-19, 24-48, claim 20, claim 21, claim 22, claim 23, claim 49, claim 50, claim 51, claim 52.

Accordingly, this international application includes nine inventions not fulfilling the requirement of unity of invention.